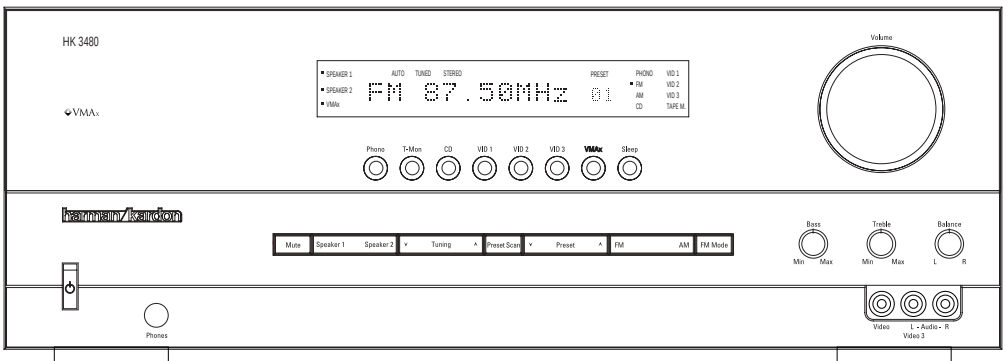
harman/kardon®

Power for the Digital Revolution®

HK 3480

STEREO RECEIVER
OWNER'S MANUAL



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See trademark acknowledgements on page 18.

Typographical Conventions

In order to help you use this manual with the remote control, front-panel controls and rear-panel connections, certain conventions have been used.

EXAMPLE – (bold type) indicates a specific remote control or front-panel button, or rear-panel connection jack

EXAMPLE – (OCR type) indicates a message that is visible on the front-panel information display

1 – (number in a square) indicates a specific front-panel control

A – (letter in a circle) indicates a button or indicator on the remote

1 – (number in a circle) indicates a rear-panel connection

A – (letter in a square) indicates an indicator in the front-panel information display

Thank You for Choosing Harman Kardon®

With the purchase of the Harman Kardon® HK 3480, you are about to begin many years of listening enjoyment. The HK 3480 has been custom-designed to provide all the excitement and power of rock, jazz and popular music, and every nuance of classical selections.

With composite video switching, the HK 3480 is more versatile than any stereo receiver ever offered by Harman Kardon. Connect a television, VCR, DVD player or video-game console to any of the three rear-panel inputs or to the front-panel input for high-quality stereo playback of video sources in any room where additional home theater speakers are not available.

While sophisticated systems are hard at work within the HK 3480 to make all of this happen, hookup and operation are simple. Color-keyed connections and a comprehensive remote control make the HK 3480 easy to use.

To obtain maximum enjoyment from your new receiver, we urge you to take a few minutes to read through this manual. This will ensure that connections to speakers, source playback units and other external devices are made properly. In addition, a few minutes spent learning the functions of the various controls will enable you to take advantage of all the power the HK 3480 is able to deliver.

If you have any questions about this product, its installation or operation, please contact your dealer, your best local source of information.

Description and Features

Harman Kardon's HK 3480 is among the world's few stereo receivers to offer VMAx.® VMAx is a proprietary signal-processing technique that creates an open, spacious sound field when only two loudspeakers are available. VMAx circuitry is able to decode the ambience of a concert hall or theater from a stereo recording.

The HK 3480 is a full-featured stereo receiver, with seven audio inputs, four video inputs and an FM stereo/FM/AM tuner with capabilities that provide for the utmost flexibility. A high-quality phono input is available so that you may continue to enjoy your existing record collection as well as the latest CD recordings.

The HK 3480's powerful amplifier uses traditional Harman Kardon high-current design philosophies to meet the wide dynamic range of any program selection.

Harman Kardon invented the high-fidelity receiver fifty years ago. With state-of-the-art features and time-honored circuit designs, the HK 3480 is one of the finest receivers ever offered by Harman Kardon.

- Harman Kardon®-designed high-current, ultrawide-bandwidth amplifier
- Four video inputs and a recording output
- Front-panel audio/video inputs
- VMAx® processing mode – exclusive to Harman Kardon receivers
- Phono input section
- Speaker 1/speaker 2 outputs for high-quality sound in two locations
- Pre-out/main-in jacks for use with external amplifiers, equalizers or speaker processors
- Subwoofer output

For Canadian model

This class B digital apparatus complies with Canadian ICES-003.
For models having a power cord with a polarized plug:
CAUTION: To prevent electric shock, match wide blade of plug to wide slot, fully insert.

Modèle pour les Canadien

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
Sur les modèles dont la fiche est polarisee:
ATTENTION: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Information

Verify Line Voltage Before Use

Your HK 3480 has been designed for use with 120-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the unit.

If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your selling dealer before plugging the unit into a wall outlet.

Do Not Use Extension Cords

To avoid safety hazards, use only the power cord attached to your unit. We do not recommend that extension cords be used with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately with cords meeting factory specifications.

Handle the AC Power Cord Gently

When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the unit for any considerable length of time, disconnect the plug from the AC outlet.

Do Not Open the Cabinet

There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water or any metal object such as a paper clip, wire or staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service station.

CATV or Antenna Grounding

If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements of the grounding electrode.

NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV (Cable TV) system installer's attention to article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

Installation Location

- To ensure proper operation, and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product.
- Make certain that proper space is provided both above and below the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. Under some circumstances a fan may be required.
- Do not place the unit directly on a carpeted surface.
- Avoid installation in extremely hot or cold locations, or an area that is exposed to direct sunlight or heating equipment.
- Avoid moist or humid locations.
- Do not obstruct the ventilation slots on the top of the unit, or place objects directly over them.
- Due to the weight of the HK 3480 and the heat generated by the amplifiers, there is the remote possibility that the rubber padding on the bottom of the unit's feet may leave markings on certain wood or veneer materials. Use caution when placing the unit on soft woods or other materials that may be damaged by heat or heavy objects.

Cleaning

When the unit gets dirty, wipe it with a clean, soft, dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water. Wipe dry immediately with a dry cloth. NEVER use benzene, aerosol cleaners, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticide near the unit.

Moving the Unit

Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet.

Important Information for the User

NOTE: This equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC Rules. The limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.

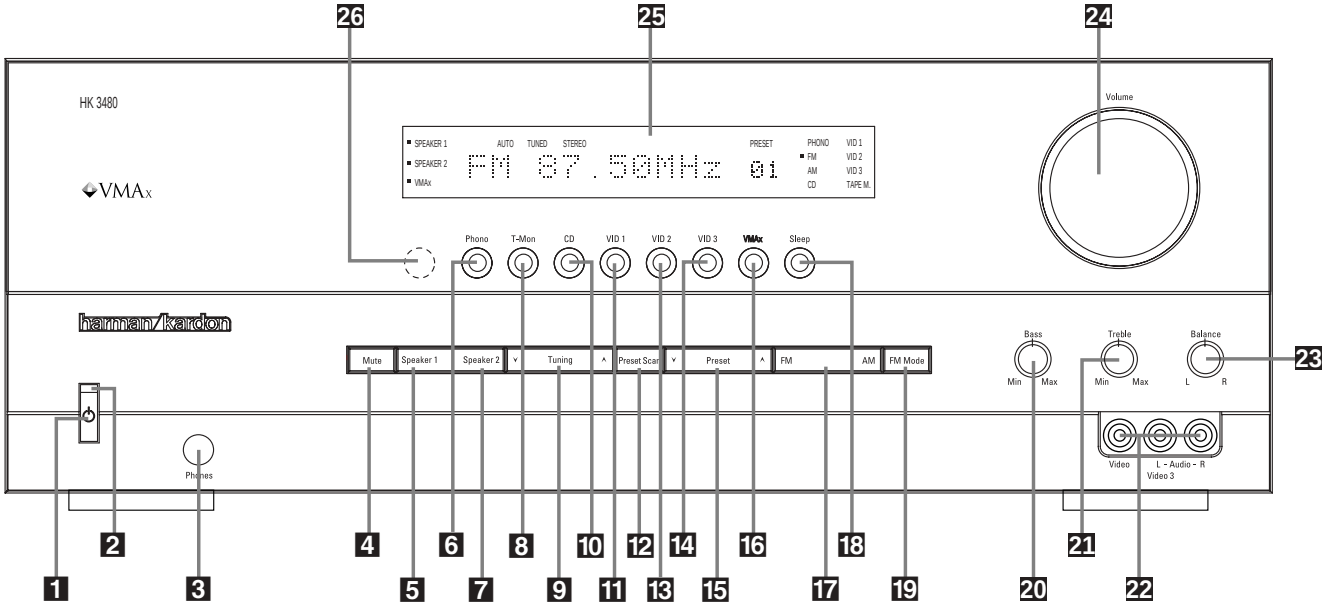
Unpacking

The carton and shipping materials used to protect your new receiver during shipment were specially designed to cushion it from shock and vibration. We suggest that you save the carton and packing materials for use in shipping if you move, or should the unit ever need repair.

To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collapsing the carton down to a more two-dimensional appearance. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center.

At this time you should remove the protective plastic film from the front-panel lens. Leaving the film in place will affect the performance of your remote control.



NOTE: To make it easier to follow the instructions that refer to this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmankardon.com.

1 System Power Control
2 Power Indicator
3 Headphone Jack
4 Mute
5 Speaker 1 Selector
6 Phono Input Selector
7 Speaker 2 Selector
8 T-Mon Input Selector
9 Tuning Button
10 CD Input Selector
11 Video 1 Input Selector
12 Preset Scan
13 Video 2 Input Selector
14 Video 3 Input Selector
15 Preset Selector
16 VMAx Selector
17 FM/AM Selector
18 Sleep Button
19 FM Mode Selector
20 Bass Control
21 Treble Control
22 Video 3 Audio/Video Input
23 Balance Control
24 Volume Control
25 Information Display
26 Remote Sensor Window

1 System Power Control: Press this button to turn on the HK 3480; press it again to turn the unit off. The Power Indicator **2** above the switch will initially turn red as the HK 3480 performs a self-check, and it will change to blue when the unit is on and ready for use.

2 Power Indicator: This LED will light in amber when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is turned on, the indicator will briefly turn red, and then change to blue. A red indicator during normal operation means that the unit is in the Protect mode, and should be turned off and then checked for a possible speaker-wire short circuit.

3 Headphone Jack: This jack may be used to listen to the HK 3480's output through a pair of headphones. Be certain that the headphones have a standard 1⁄4" stereo phone plug.

4 Mute: Press this button to momentarily silence the speaker output of the HK 3480. The message MUTE will flash in the Main Information Display **B**, and the Mute Indicator **K** will blink.

5 Speaker 1 Selector: Press this button to turn the speakers connected to the Speaker 1 Output Terminals ⓭ on or off.

6 Phono Input Selector: Press this button to select the output of a turntable that is connected to the Phono Inputs ❷.

7 Speaker 2 Selector: Press this button to turn the speakers connected to the Speaker 2 Output Terminals ⓮ on or off.

8 T-Mon Input Selector: Press this button to listen to the output of a tape recorder connected to the Tape Monitor Inputs ❹. The dot to the left of the Tape Monitor Input Indicator **D** will flash to indicate that the input source is being monitored when the HK 3480 is connected to a three-head tape deck or another unit with off-head playback. See page 15 for more information on monitoring tape recordings.

9 Tuning Button: Press the left side of the button to tune lower-frequency stations and the right side of the button to tune higher-frequency stations. When a station with a strong signal is tuned, the Tuned Indicator **I** will light. A brief (1/2-second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception.

10 CD Input Selector: Press this button to listen to the output of a CD player connected to the CD Audio Inputs ❸.

11 Video 1 Input Selector: Press this button to listen to and/or view the output of a device connected to the Video 1 Inputs ⑥.

12 Preset Scan: Press this button to automatically scan through the stations that have been programmed in the HK 3480's memory. The tuner will play five seconds of each station before moving to the next preset station. To stop the scan when the desired station is heard, press the button again. If no preset stations have been programmed into the HK 3480's memory, the message 0 PRESET will flash in the Main Information Display **B** when this button is pressed. (See page 15 for more information on the tuner memory system.)

13 Video 2 Input Selector: Press this button to listen to and/or view the output of a device connected to the Video 2 Inputs ⑧.

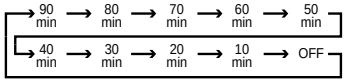
14 Video 3 Input Selector: Press this button to listen to and/or view the output of a device connected to the Video 3 Inputs ⑨ **22** on either the front or rear panel. If devices are connected to both the front- and rear-panel Video 3 Inputs ⑨ **22**, then the device connected to the rear-panel Video 3 Inputs ⑨ will be selected first, as indicated by the dot to the left of the Video 3 Input Indicator **D** being steadily lit. To select the device connected to the front-panel Video 3 Inputs **22**, press the Video 3 Input Selector **14** again so that the dot to the left of the Video 3 Input Indicator **D** flashes. Each subsequent press of the Video 3 Input Selector **14** will toggle between the front and rear Video 3 Inputs ⑨ **22**.

15 Preset Selector: Press this button to step up or down through the list of stations that has been entered into the preset memory. If no preset stations have been programmed into the HK 3480's memory, the message 0 PRESET will flash in the Main Information Display **B** when this button is pressed. (See page 15 for more information on tuner programming.)

16 VMAx Selector: Press this button to engage VMAx processing of a stereo input. The VMAx Mode Indicator **A** will light, and you will notice a wider, more spacious sound field. In order to obtain maximum benefit, you should be seated midway between the two loudspeakers, and the same distance from the speakers as the speakers are from each other. The speakers must be placed facing parallel and evenly with each other so that their baffles are in the same plane. Press the button again to return to Stereo mode.

17 FM/AM Selector: Press this button to select the tuner as the input to the receiver. Press the left side of this button to select the FM frequency band, or the right side to select the AM frequency band.

18 Sleep Button: Press this button to place the unit in the Sleep mode. Each press of the button selects the amount of time that will remain before the unit automatically goes into the Standby mode, as indicated by the Sleep Timer **C**, in the following order:



19 FM Mode Selector: Press this button to select the Auto Stereo or Mono mode for FM tuning. In the Auto Stereo mode, the Auto Indicator **J** and Stereo Indicator **H** will light, and stereo reception will be provided when stations are transmitting stereo signals. In the Mono mode, the left and right signals from stereo broadcasts will be mixed together and reproduced through all channels. Select Mono mode for better reception of weak signals.

20 Bass Control: Turn this control to modify the low-frequency output of the left/right channels by as much as ±10dB. Set this control to a suitable position for your taste and room acoustics.

21 Treble Control: Turn this control to modify the high-frequency output of the left/right channels by as much as ±10dB. Set this control to a suitable position for your taste and room acoustics.

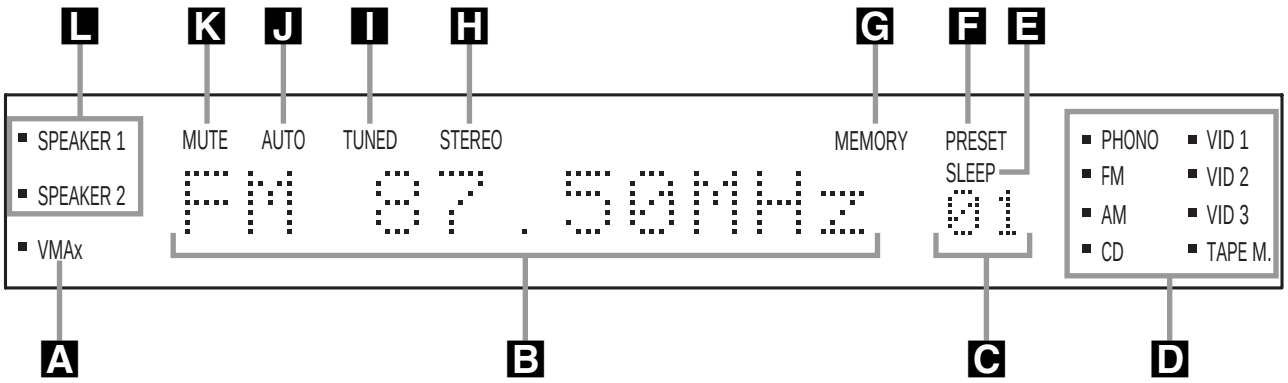
22 Video 3 Audio/Video Inputs: The front-panel Video 3 Audio/Video Inputs **22** are convenient for connecting devices that will only be used temporarily, such as when you wish to view vacation videos directly from the camera. Connect these jacks to the PLAY/OUT jacks of an audio or video device, such as a camcorder or video-game console. To select the front-panel inputs, press the Video 3 Input Selector **14** repeatedly until the dot to the left of the Video 3 Input Indicator **D** flashes. In order to view the video signal of a video device connected to this input, remember to connect the Video Monitor Output ⑲ to the video input of your TV or video display.

23 Balance Control: Turn this control to change the relative volume for the front left/right channels.

24 Volume Control: Turn the knob clockwise to increase volume, counterclockwise to decrease volume. When the unit has been muted by pressing the Mute Button **4**Ⓡ, the message MUTE will flash in the Main Information Display **B**, and the Mute Indicator **K** will blink.

25 Information Display: This display delivers messages and status indications to help you operate the receiver.

26 Remote Sensor Window: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.



NOTE: To make it easier to follow the instructions that refer to this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmankardon.com.

A VMAx Mode Indicator
B Main Information Display
C Preset Number/Sleep Timer
D Input Indicators
E Sleep Indicator
F Preset Indicator
G Memory Indicator
H Stereo Indicator
I Tuned Indicator
J Auto Indicator
K Mute Indicator
L Speaker Selection Indicators

A VMAx Mode Indicator: This indicator lights when the VMAx mode is in use. (See page 14 for a description of the VMAx Mode.)

B Main Information Display: This display shows messages relating to the status, input source, tuner or other aspects of the HK 3480's operation.

C Preset Number/Sleep Timer: When the tuner is in use, these numbers indicate the specific preset memory location in use. (See page 15 for more information on preset stations.) When the Sleep function is in use, these numbers show how many minutes remain before the unit goes into the Standby mode.

D Input Indicators: The dot to the left of the name of the device that is currently the source input for the HK 3480 will light.

When the device connected to the Tape Monitor Inputs ❹ has been selected, the dot to the left of the Tape Monitor Input Indicator **D** will flash to indicate that you are hearing the signal the HK 3480 is receiving from the device connected to the Tape Monitor Inputs ❹. The dot to the left of the Input Indicator **D** for the last-selected source input will remain lit. See page 15 for more information on monitoring tape recordings.

E Sleep Indicator: This indicator lights when the Sleep function is in use. The numbers in the Preset Number/Sleep Timer Indicators will show the minutes remaining before the HK 3480 goes into the Standby mode. (See page 14 for more information on the Sleep function.)

F Preset Indicator: This indicator lights when the tuner is in use to show that the Preset Number/Sleep Timer **C** is showing the station's preset memory number. (See page 15 for more information on tuner presets.)

G Memory Indicator: This indicator flashes when entering presets and other information into the tuner's memory.

H Stereo Indicator: This indicator lights when an FM station is being tuned in stereo.

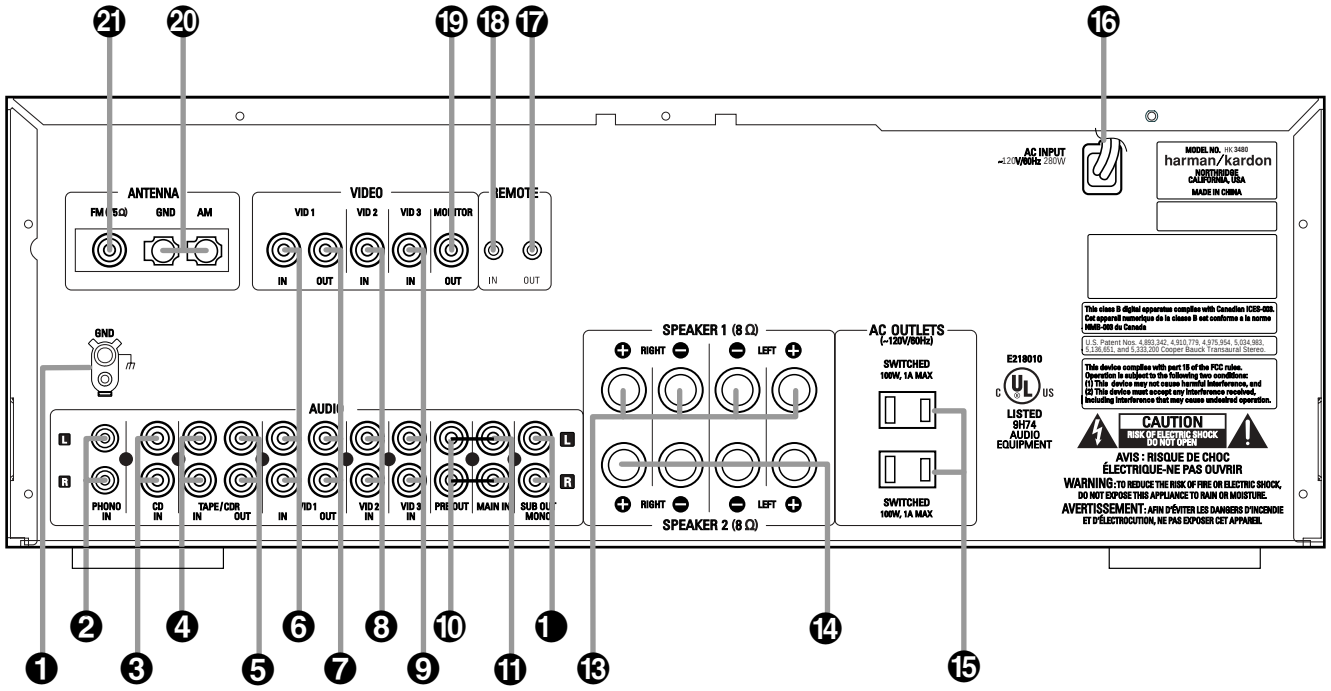
I Tuned Indicator: This indicator lights when a station is being received with sufficient signal strength to provide acceptable listening quality.

J Auto Indicator: This indicator lights when the tuner's Auto Stereo mode is in use.

K Mute Indicator: This indicator flashes to remind you that the HK 3480's output has been silenced by pressing the Mute Button **4** Ⓡ. Press the Mute button again to return to the previously selected output level.

L Speaker Selection Indicators: The dot to the left of the indicator for each speaker pair will light when that pair is active. Press the Speaker 1 **5** or Speaker 2 **7** selectors to activate either or both pairs of speakers.

REAR-PANEL CONNECTIONS



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❶ Phono Ground
❷ Phono Inputs
❸ CD Audio Inputs
❹ Tape Monitor Play/In
❺ Tape Monitor Record/Out
❻ Video 1 Audio/Video Play/In
❼ Video 1 Audio/Video Record/Out
❽ Video 2 Audio/Video Inputs
❾ Video 3 Audio/Video Inputs
❿ Preamp Out
⓫ Main In
❶ Subwoofer Out
⓭ Speaker 1 Terminals
⓮ Speaker 2 Terminals
⓯ Accessory Outlets
⓰ Power Cable
⓱ Remote IR Out
⓲ Remote IR In
⓳ Video Monitor Output
⓴ AM Antenna
㉑ FM Antenna

❶ Phono Ground: Connect the ground wire from a turntable to this terminal to reduce system hum.

❷ Phono Inputs: Connect the outputs of your turntable or tonearm to these jacks. Only Moving Magnet (MM)-type cartridges may be used.

❸ CD Audio Inputs: Connect these jacks to the output of a compact disc player or CD changer.

❹ Tape Monitor Play/In: Connect these jacks to the Play/Out jacks of an audio recorder.

❺ Tape Monitor Record/Out: Connect these jacks to the Rec/In jacks of an audio recorder.

NOTE: When these jacks are connected to a three-head recorder or another device with off-head playback, it will be possible to monitor the source being recorded.

❻ Video 1 Audio/Video Play/In: Connect these jacks to the PLAY/OUT jacks of an audio or video device, such as a VCR or DVD player. In order to view the video signal of a video device connected to this input, remember to connect the Video Monitor Output ⓳ to the video input of your TV or video display.

❼ Video 1 Audio/Video Record/Out: Connect these jacks to the Rec/In jacks of an audio or video recorder.

❽ Video 2 Audio/Video Inputs: Connect these jacks to the PLAY/OUT jacks of an audio or video device, such as a VCR or DVD player. In order to view the video signal of a video device connected to this input, remember to connect the Video Monitor Output ⓳ to the video input of your TV or video display.

❾ Video 3 Audio/Video Inputs: Connect these jacks to the PLAY/OUT jacks of an audio or video device, such as a VCR or DVD player. In order to view the video signal of a video device connected to this input, remember to connect the Video Monitor Output ⓳ to the video input of your TV or video display.

❿ Preamp Out: These jacks provide an output for the left and right channels to an optional external amplifier. In normal operation, unless an external power amplifier is used, the jumper pins should remain connected between these jacks and the Main In Jacks ⓫.

⓫ Main In: These jacks are the input to the HK 3480's power amplifier. Unless an external power amplifier is used, the jumper pins should remain connected between these jacks and the Preamp Out Jacks ❿.

❶ Subwoofer Out: Connect these jacks to the line-level inputs of a powered subwoofer. If an external subwoofer amplifier is used, connect these jacks to the subwoofer amplifier inputs. When a single, mono subwoofer is used, or if the subwoofer or its amplifier has only a single line-level input jack, make the connection to the bottom jack on the HK 3480.

⓭ Speaker 1 Terminals: Connect these terminals to the appropriate terminals on your speakers.

⓮ Speaker 2 Terminals: Connect these terminals to the appropriate terminals on your speakers.

⓯ Accessory Outlets: These outlets may be used to power low-current-draw devices such as CD players or cassette decks. The power to these outlets remains on as long as the receiver itself is on. When the receiver is placed in the Standby mode, power to these outlets is removed.

NOTE: The power consumption of the devices plugged into these outlets should not exceed 100 watts.

⓰ Power Cable: Connect the AC plug to a non-switched AC wall output.

⓱ Remote IR Out: This connection permits the IR sensor in the receiver to serve other remote-controlled devices. Connect this jack to the "IR In" jack on Harman Kardon (or other compatible) equipment.

⓲ Remote IR In: If the HK 3480's front-panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

⓳ Video Monitor Output: Connect this jack to the composite video input of your TV or video display device. Doing so will enable you to view the video signal of a properly connected video source device, when that source input is selected. When an audio-only source is selected, the Video Monitor Output ⓳ will not transmit a video signal.

⓴ AM Antenna: Connect the AM loop antenna supplied with the receiver to these terminals. If an external AM antenna is used, make connections to the AM and GND terminals in accordance with the instructions supplied with the antenna.

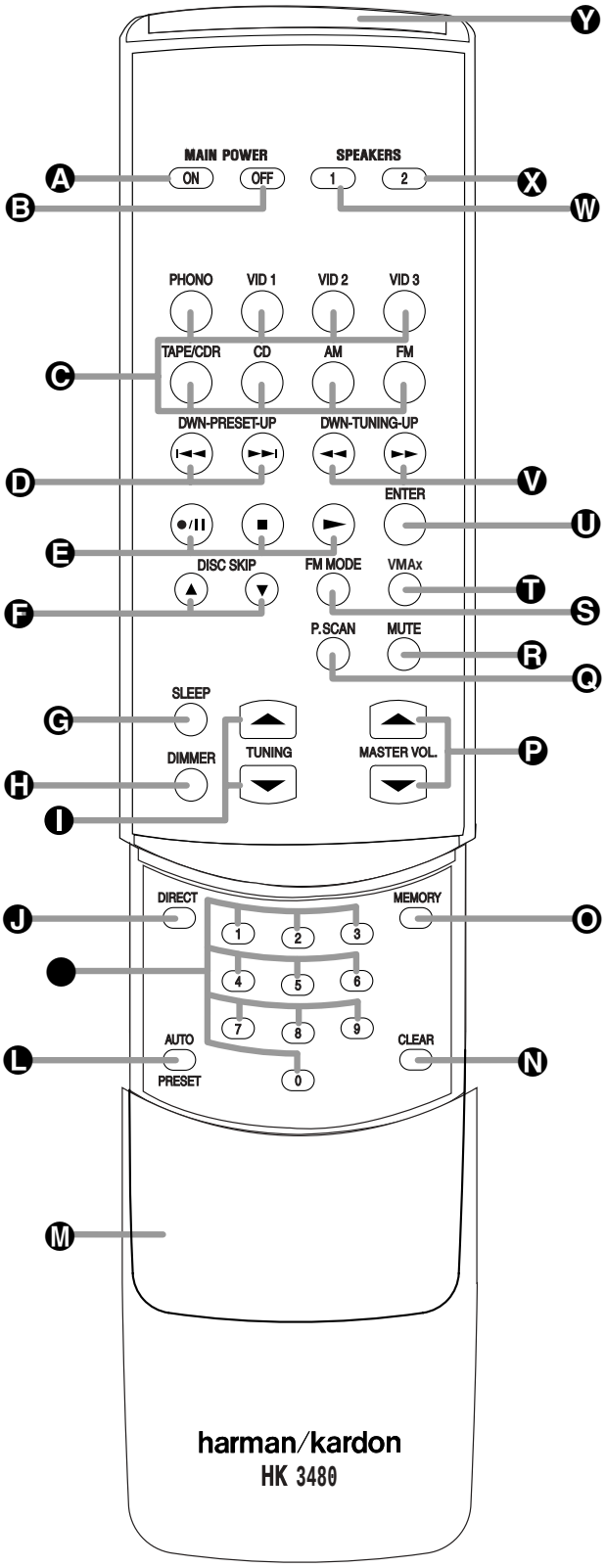
㉑ FM Antenna: Connect an indoor or external FM antenna to this terminal.

REMOTE CONTROL FUNCTIONS

- Ⓐ Main Power On
- Ⓑ Main Power Off
- Ⓒ Source Selectors
- Ⓓ Preset Up/Down
- Ⓔ Transport Controls
- Ⓕ Disc Skip
- Ⓖ Sleep Button
- Ⓗ Dimmer Button
- Ⓘ Tuning
- Ⓙ Direct Button
- ● Numeric Keys
- Ⓛ Auto Preset
- Ⓜ Secondary Control Cover
- Ⓝ Clear Button
- Ⓞ Memory Button
- Ⓟ Master Volume
- Ⓠ Preset Scan Button
- Ⓡ Mute Button
- Ⓢ FM Mode Button
- Ⓣ VMAx Selector
- Ⓤ Enter Button
- Ⓥ Tuning Up/Down
- Ⓦ Speaker 1 Selector
- Ⓧ Speaker 2 Selector
- Ⓨ Transmitter Window

NOTES:

- The function names shown here are each button's feature when used with the HK 3480. Most buttons have additional functions when used with other devices. See page 16 for a list of these functions.
- To make it easier to follow the instructions that refer to this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmankardon.com.



Ⓐ Main Power On: When the HK 3480 is in the Standby mode, as indicated by the Power Indicator 2 glowing amber, press this button to turn the HK 3480 on.

Ⓑ Main Power Off: When the HK 3480 is turned on, press this button to place it in the Standby mode. In this condition, the unit is still connected to AC Power.

Ⓒ Source Selectors: Press these buttons to select an input source for the HK 3480.

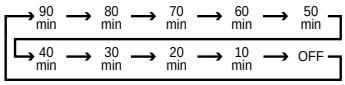
NOTE: The first press of the Video 3 Source Selector Ⓒ will select the device connected to the rear-panel Video 3 Audio/Video Inputs ⑨. Press the Video 3 Source Selector Ⓒ again until the dot to the left of the Video 3 Input Indicator D flashes to select the device connected to the front-panel Video 3 Audio/Video Inputs 22. Each additional press of the Video 3 Source Selector Ⓒ will toggle between the front- and rear-panel Video 3 Audio/Video Inputs ⑨22.

Ⓓ Preset Up/Down: When the tuner is in use, these buttons scroll through the stations that have been programmed into the HK 3480's memory. These buttons also control the track Skip Up/Down on compatible Harman Kardon compact disc players/changers.

Ⓔ Transport Controls: These buttons are used to control the Play, Stop, Pause and Record functions on compatible Harman Kardon CD/DVD players/changers and CD recorders.

Ⓕ Disc Skip: These buttons do not have any functions when controlling the HK 3480, but they operate the Disc Skip functions of compatible Harman Kardon CD/DVD changers.

Ⓖ Sleep Button: Press this button to place the unit in the Sleep mode. Each press of the button selects the amount of time that will remain before the unit will automatically go into the Standby mode, as shown in the Sleep Timer C, in the following order:



Ⓗ Dimmer Button: Press this button to dim the front-panel displays and indicators. The first press of the button will dim the displays to one-half normal brightness and turn off the blue light inside the Volume Control 24, but the Power Indicator 2 will remain lit. The next press of the Dimmer Button 16 will turn off all displays, including the light inside the Volume Control 24, but the Power Indicator 2 will remain lit to remind you that the unit is turned on. Press the button again to return the display to normal brightness. When the panel is dimmed, it will return to normal brightness after the unit is turned off, then on again.

Ⓘ Tuning: Press these buttons to tune up or down through a selected frequency band. A brief (1/2-second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception.

Ⓙ Direct Button: Press this button to select a radio station by entering its frequency using the Numeric Keys K. (See page 14 for more information.)

● Numeric Keys: These buttons serve as a 10-button numeric keypad to enter tuner preset positions or to tune stations directly.

Ⓛ Auto Preset: When the tuner and FM band have been selected, this button may be used to automatically program the tuner presets for all active stations. To start the auto preset scan, press and hold the button. Note that the Memory G and Preset F indicators will flash. After a few seconds, the tuner will start to "look" for active stations, as shown by increasing frequency numbers in the Main Information Display B. Release the button and note that the tuner will briefly stop at each active station and add a preset number to the memory. If the FM tuner finds fewer than 30 FM stations with acceptable signal strength, the Auto Preset tuning will scan two more cycles or until the remaining vacant preset memory spaces have been filled with those found in the first scan. The scan will stop when all 30 preset memory spaces have been filled or when three scans through the band have been completed.

Ⓜ Secondary Control Cover: This sliding cover normally is in the "up" position so that it hides the secondary controls. To access these controls, place your thumb on the small recessed area at the top center of the control, and gently press the cover down and toward you.

Ⓝ Clear Button: This button is used to clear preset memory information for the HK 3480's tuner. (See page 15 for more information on tuner presets.)

Ⓞ Memory Button: Press this button to open a memory position that stores a preset location for the HK 3480's tuner. (See page 15 for more information on tuner presets.)

Ⓟ Master Volume: Press these buttons to raise or lower the HK 3480's volume.

Ⓠ Preset Scan Button: Press this button to automatically scan through the list of stations that are programmed into the HK 3480's tuner memory. When the button is pressed, each preset station will play for five seconds before the next station is selected. Press the button again when the desired station is heard, to stop the preset scan.

Ⓡ Mute Button: Press this button to momentarily silence the HK 3480.

Ⓢ FM Mode Button: Press this button when the tuner is in use in the FM band to switch to monaural reception if the station is weak and noisy. (See page 14 for more information.)

Ⓣ VMAx Selector: Press this button to engage VMAx processing of a stereo input. The VMAx Mode Indicator A will light, and you will notice a wider, more spacious sound field. In order to obtain maximum benefit, you should be seated midway between the two loudspeakers, and the same distance from the speakers as the speakers are from each other. The speakers must be placed facing parallel and evenly with each other so that their baffles are in the same plane. Press the button again to return to Stereo mode.

Ⓤ Enter Button: This button has no function on the HK 3480, but may be used as the Enter key for a compatible Harman Kardon DVD Player or as the Random Play button for a compatible CD Player. See page 16 for more information on using the remote to control other devices.

Ⓥ Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. A brief (1/2-second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception. These buttons will also control Fast Forward and Fast Reverse (or Rewind) for compatible Harman Kardon compact disc players/changers.

Ⓦ Speaker 1 Selector: Press this button to turn the speakers connected to the Speaker 1 Output Terminals ⑬ on or off.

Ⓧ Speaker 2 Selector: Press this button to turn the speakers connected to the Speaker 2 Output Terminals ⑭ on or off.

Ⓨ Transmitter Window: Point this area of the remote toward the receiver when using the remote.

System Installation

After unpacking the unit, and placing it on a solid surface capable of supporting its weight, you will need to make the connections to your audio equipment. These steps need to be done only when the receiver is first installed, or when a change is made to the input source equipment.

Audio Equipment Connections

We recommend that you use high-quality interconnect cables when making connections to source equipment and recorders to preserve the quality of the signals.

When making connections to audio source equipment or speakers it is always a good practice to unplug the unit from the AC wall outlet. This prevents any possibility of accidentally sending audio or transient signals to the speakers that may damage them.

1. Connect the analog output of a CD player to the CD Audio Inputs ❸.

NOTE: When the CD player has both fixed and variable audio outputs, it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or so high that the signal is distorted.

2. Connect the Play/Out jacks of a cassette deck, CDR, MD or other audio recorder to the Tape Monitor In Jacks ❹. Connect the Record/In jacks on the recorder to the Tape Monitor Out Jacks ❺ on the HK 3480. When the tape deck connected to these jacks is a three-head unit or has off-head playback, it will be possible to monitor the output of the source being recorded.

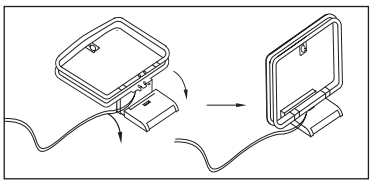
3. Connect the audio and/or video outputs of a second audio recorder, VCR or other line-level audio device to the Video 1 Audio/Video Input Jacks ❻. If a recorder is used, connect its Rec/In jacks to the matching outputs ❼.

4. The audio and/or video outputs of any electronics product with a line-level output, such as a TV set, satellite receiver or DVD, may be connected to the Video 2 and Video 3 Audio/Video inputs ❽❾.

NOTE: In order to view the video signals of any devices connected to the Video 1 ❻, Video 2 ❽ or Video 3 ❾ Video Inputs, you will need to connect the Video Monitor Output ⓳ jack to the composite video input of your TV or other video display device.

5. Connect the outputs of a turntable with a moving magnet cartridge to the Phono Inputs ❷. To insure that the phono playback is noise-free, connect the ground wire from the tone arm to the Phono Ground Terminal ❶.

6. Assemble the AM Loop Antenna supplied with the unit as shown. Connect it to the AM Screw Terminals ⓴.



7. Connect an FM antenna to the FM (75-ohm) Connection ㉑. The FM antenna may be an external roof antenna, an inside powered or wire lead antenna or a connection from a cable TV system. If the antenna or connection uses 300-ohm twin-lead cable, you must use an optional 300-ohm-to-75-ohm adapter to make the connection. Note that you will *not* be able to view any video signal using the FM Antenna Connection ㉑, even if you connect your cable television system to it.

Speaker and Output Connections

To assure that all the audio signals are carried to your speakers without loss of clarity or resolution, we suggest that you use high-quality speaker cable. Many brands of cable are available, and the choice of cable may be influenced by the distance between your speakers and this receiver, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting the proper cable.

Regardless of the brand of cable selected, we recommend that you use a cable constructed of fine, multi-strand copper with a gauge of 14 or smaller. Remember that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend that you use cables with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

Cables that are run inside walls should have the appropriate markings to indicate listing with UL, CSA or other appropriate testing agency standards. Questions about running cables inside walls should be referred to your installer or a licensed electrical contractor who is familiar with the NEC and/or the applicable local building codes in your area.

When connecting wires to the speakers, be certain to observe proper polarity. Remember to connect the "negative" or "black" wire to the same terminal on the receiver and the speaker. Similarly, the "positive" or "red" wire should be connected to the like terminal on the HK 3480 and speaker.

We also recommend that the length of cable used to connect speaker pairs be identical. For example, use the same length piece of cable to connect the Speaker 1 left and right or Speaker 2 left and right speakers, even if the speakers are a different distance from the HK 3480.

NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some manufacturers may vary from this configuration. To assure proper phase, and optimal performance, consult the identification plate on your speaker, or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer for advice before proceeding, or consult the speaker's manufacturer.

Connect the speakers using the following steps:

1. Connect the main speakers to the Speaker 1 Terminals ⓭.

2. You may connect a second set of speakers, or speakers that are in a second room location, to the Speaker 2 Terminals ⓮.

3. When an optional, powered subwoofer is used, connect the outputs of the left and right Subwoofer Out Jacks ❶ to the line-level inputs of the subwoofer. When the subwoofer's amplifier has stereo inputs, run interconnects from both jacks. When the subwoofer has a mono input only, use the bottom output jack for the connection. If the subwoofer has only speaker-level inputs and outputs, connect the Speaker 1 Terminals ⓭ to the speaker-level inputs on the subwoofer, and then connect the speaker-level outputs on the subwoofer to your main left and right speakers, following the instructions provided with the subwoofer. When a passive subwoofer is used, these connections will be made to the optional amplifier that powers the subwoofer.

System and Power Connections

The HK 3480 is designed for flexible use with external control components and power amplifiers. These connections are easy to make during an initial installation, or at a later date, should you choose to upgrade your system.

Remote Control Extension

If the receiver is placed behind a solid or smoked glass cabinet door, the obstruction may prevent the remote sensor from receiving commands. In this event, an optional remote sensor may be used. Connect the output of the remote sensor to the Remote IR In Jack ⓲.

If other components are also prevented from receiving remote commands, only one sensor is needed. They may use this unit's sensor or a remote eye by running a connection from the Remote IR Out Jack ⓱ to the Remote In jack on Harman Kardon or other compatible equipment.

External Audio Power Amplifier Connections

If desired, an optional, external amplifier may be used in place of the HK 3480's internal power amplifier.

To connect an external power amplifier, first remove the jumper pins that connect the Preamp Out ⓾ and Main In ⓫ jacks on the rear panel. Keep the jumpers in a safe place should they be needed at a later time.

Using high-quality audio interconnect cables, connect the Preamp Out Jacks ⓾ to the input jacks on your power amplifier. Make certain to match the right output to the right input and the left output to the left input.

When an external power amplifier is used, no special adjustments are required. All volume and other control adjustments are made using the standard front-panel or remote controls.

If you wish to use external processing equipment, such as an equalizer, you may connect the device to the preamp-out and main-in jacks by removing the jumper pins between the Preamp Out ⓾ and Main In ⓫ jacks. Connect the Preamp Out ⓾ jacks to the inputs of the external device, and the outputs of the device to the Main In ⓫ jacks.

Alternatively, you may connect the external device to the Tape Monitor Loop. Connect the Tape Monitor Record/Out Jacks ❺ to the inputs of the external device, and connect the outputs of the device to the Tape Monitor Play/In Jacks ❹.

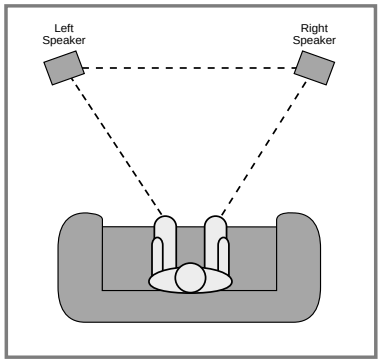
AC Power Connections

The Accessory Outlets ⓯ are switched outlets and receive power as long as the receiver is turned on. Power to these outlets is removed when the unit is in the Standby mode.

Speaker Placement

For optimal listening enjoyment, and for soundfield reproduction that best re-creates the original recording, it is good practice to place the speakers so that they form a triangle with the speakers at the front of the room, and the preferred listening spot at the third point of the triangle. The distance between each speaker and the listener should be identical.

For example, if the speakers are 10 feet from one another, each of the speakers should optimally be placed so that they are also 10 feet from the listener. It is also desirable to place speakers so that their tweeters, or high-frequency drivers are aimed at ear height when you are seated in the listening position.



A good starting point for speaker placement is to make the distance between the two speakers, and the distance between either speaker and the listener, identical.

To optimize the sound field, or to suit your listening room environment, you may find that some experimentation is required to find the correct location. Ideally, pans from left to right across the front of the room should sound smooth, and instruments should appear to be coming from the proper location to where they would be placed in an orchestra. You may also prefer to "toe-in" the speakers slightly toward the listening position, as shown in the diagram, for improved imaging.

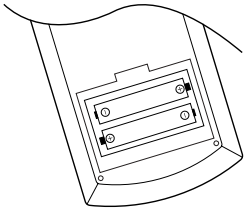
The placement of subwoofers should be done as suggested in the manufacturer's instructions. In general, subwoofers often produce best results when they are placed in the corner of a room, along the same wall as the speakers, but optimal placement will vary widely depending on room size, the subwoofer type and the placement of rugs and furniture in a room. It may be helpful to temporarily position the subwoofer in the usual listening position, then walk around the room while program material is playing until the bass reproduction sounds best to your ears. That location is likely to be the optimum position for the subwoofer.

Finally, when all connections are complete, plug the power cord into a nonswitched 120-volt AC wall outlet. You're ready to enjoy the HK 3480!

Basic Operation

Once you have completed the setup and configuration of your new receiver, it is simple to operate and enjoy. The following instructions will provide the steps needed to enjoy the HK 3480:

- Install the two supplied AAA batteries in the remote as shown. Be certain to observe the (+) and (–) polarity indicators shown in the bottom of the battery compartment.



- You may begin a listening session by pressing the System Power Control 1 on the front panel or the Main Power On Button A on the remote. The Power Indicator 2 will turn red, then blue. This will turn the unit on and return it to the input source that was last used. The unit may also be turned on from Standby by pressing any of the Source Selector buttons on the front panel 6 8 10 11 13 14 or remote C.

  To turn the unit off at the end of a listening session, simply press the System Power Control 1 on the front panel or the Main Power Off Button B on the remote. This places the unit in the Standby mode, and the Power Indicator 2 will turn amber to remind you that the unit is ready for operation when a power command is received from the remote.

  When the remote is used to turn the unit "off" it is actually placing the system in a Standby mode, as indicated by the amber color of the Power Indicator 2.

- To dim the brightness of the Information Display 25, press the Dimmer Button H. The first press will dim the lights to half normal. The Power Indicator 2 will remain lit, but the light inside the Volume Control 24 will go out. A second press will turn the display completely off, but the Power Indicator 2 will remain lit to remind you that the unit is on. Press the Dimmer Button H again to restore the display to normal brightness.

Source Selection

- To select a source at any time, press any of the Source Selector buttons on the remote C or front panel 6 8 10 11 13 14.

- When a video source is selected, if you have connected a video device to the video input jack for that source, and if you have connected the Video Monitor Output 19 to the composite video input of your TV or video display, you will be able to enjoy video programs from a broadcast, cable or satellite television system; a VCR or hard-disk video recorder; a DVD player; or any other video device with analog line-level audio outputs and a composite video output.

NOTE: Although the HK 3480 is an audio/video receiver, it is not a surround sound receiver. Audio will be played in two-channel stereo or monaural, depending on how the program material is encoded, and you will not be able to hear any additional channels that may be encoded in your source materials. The HK 3480 offers the versatile VMAx mode, described below, which enables you to hear a simulated surround sound presentation. However, VMAx processing uses different algorithms than conventional surround decoders to derive the phantom center and surround speakers, and the presentation will differ from what you may hear when listening to equipment using other surround processors. You will not be able to make any digital audio connections through the HK 3480. The HK 3480 is designed to provide video entertainment in a small system application that includes devices such as a TV, VCR or DVD player located in a bedroom, office or spare room, or as part of a multiroom system when used with a multiroom controller.

- During a listening session you may wish to adjust the Bass 20, Treble 21 and Balance 23 controls to suit your listening tastes.

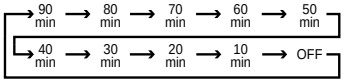
- Adjust the volume to a comfortable level using the front-panel Volume Control 24 or remote Master Volume Up/Down P buttons. The volume level is displayed as a negative number of decibels (dB) in the Main Information Display B. The volume level is relative to a maximum volume level that has been assigned the value of 0dB. It is important that you make sure never to exceed this maximum volume level (0dB) at any time, in order to avoid possible damage to your loudspeakers due to "clipping", a type of distortion that is not audible to the human ear until it is severe enough to permanently damage most loudspeakers. It is also possible, depending upon the program material, for clipping to occur at volumes below the maximum volume level.

- To temporarily silence all speaker outputs, press the Mute Button R 4. This will cut the output to all speakers, but it will not affect any recording or dubbing that may be in progress. When the system is muted, the Mute Indicator K will flash in the Information Display 25 and MUTE will flash in the Main Information Display B. Press the Mute Button R 4 again to return to normal operation.

- For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front-panel Headphone Jack 3.

- One or two separate sets of speakers may be connected to the HK 3480. To listen to one of the speaker sets, press the Speaker Selectors 5 7 V W corresponding to the desired speakers. The active speakers will be indicated by the Speaker Indicators L. Both speakers may be turned off for private headphone listening.

- To program the HK 3480 for automatic turnoff, press the Sleep Button 18 G. Each press of the button will increase the time before shutdown, displayed by the Sleep Timer C, in the following sequence:



The sleep time will be displayed in the Information Display 25 and it will count down until the time has elapsed.

When the programmed time has elapsed, the unit will automatically turn off. The Information Display 25 will dim to one-half brightness when the Sleep function is programmed. To cancel the Sleep function, press the Sleep Button 18 G until the Sleep Timer C numbers disappear and the Information Display 25 shows the current source. Pressing any control button while the Sleep control is activated will momentarily return the Information Display 25 to full brightness for increased legibility without interrupting the Sleep function.

To take advantage of Harman Kardon's exclusive VMAx mode, Press the VMAx Button 16 T. When the VMAx circuits are engaged, patented processing algorithms are used to create a three-dimensional sound space with the illusion of "phantom" speakers at the center and surround positions. This spacious sound will simulate a surround sound presentation without the need to add additional speakers. To return to standard stereo listening, press the VMAx Button 16 T again and the VMAx Mode Indicator A will go out.

Tuner Operation

The HK 3480's tuner is capable of tuning AM, FM and FM Stereo broadcast stations. Stations may be tuned manually, or they may be stored as favorite station presets and recalled from a 30-position memory.

Station Selection

1. Press the FM/AM Selector 17 C to select the tuner as an input.

2. Press these buttons again at any time to switch between AM and FM.

3. To select stations, press the Tuning Button 9 V to advance one frequency increment at a time, or press and hold it, and the tuner will search for the next highest- or lowest-frequency station that has an acceptable

signal. To tune to the next station, press and hold the button again. When the Tuned Indicator I lights, the station is properly tuned and should be heard with clarity.

4. Stations may also be tuned directly by pressing the Direct Button J, and then pressing the Numeric Keys ● that correspond to the station's frequency. The desired station will automatically be tuned.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the FM Mode Button 19S until the Stereo Indicator H goes out.

Preset Tuning

Up to 30 stations may be stored in the HK 3480's memory for easy recall using the front-panel controls or the remote.

To enter a station into the memory, first tune the station using the steps outlined above. Then:

1. Press the Memory Button O on the remote. The Memory G and Preset F Indicators will light and flash in the Information Display 25.

2. Within five seconds, press the Numeric Keys ● corresponding to the location where you wish to store this station's frequency. The preset number will appear in the Preset Number C display.

3. Repeat the process after tuning any additional stations to be preset.

Auto Preset

- Preset stations may also be programmed automatically for the FM band. To automatically enter each station that may be tuned with acceptable quality into the HK 3480's preset memories, first select the FM band. Next, press and briefly hold the Auto Preset Button L until the Memory G and Preset F Indicators begin to flash, and the station frequency indication begins to increase. Release the button and the tuner will search the entire FM band, and stop briefly at each station that has acceptable signal strength. The HK 3480 will automatically assign a preset number to each station, and then search for the next station. The automatic scan process will stop when all 30 preset memory locations have been filled or the entire FM band has been scanned three times.

NOTE: Using the automatic tuning mode in areas with more than 30 FM stations will completely fill the preset memories, and overwrite any previously memorized presets for either AM or FM stations.

TIP: The automatic scan process may enter stations that you do not wish to retain in the memory, or it may enter a station on more than one frequency if the signal is too strong. These unwanted stations may be removed from the memory using the Preset Clear function outlined below.

Recalling Preset Stations

- To manually select a station previously entered in the preset memory, press the Numeric Keys ● that correspond to the desired station's preset memory location.
- To manually tune through the list of stored preset stations one by one, press the Preset ◀/▶ Buttons 15 D on the front panel or remote.
- To automatically scan through the stations entered in the preset memory, press the Preset Scan Button 12 Q. The tuner will run through the list of preset stations in the Preset Number C display, stopping for five seconds at each one. Press the button again to stop the scan at your desired station.

Clearing Preset Stations

Unwanted preset stations may be erased from the unit's memory to make it easier to tune only those stations you want.

To remove a preset station from the HK 3480's tuner memory, first tune to the station using the Preset Scan Button 12 Q, or by entering the preset number directly, using the Numeric Keys ●.

When the preset station to be removed has been tuned, first press the Memory Button O. The Memory G and PRESET F Indicators in the Information Display 25 will flash, and the actual preset number will disappear from the Preset Number C display. Next, press the Clear Button N within five seconds.

The preset station will be removed from the memory, and the action will be confirmed by the brief appearance of the word CLEAR and the preset number location in the Information Display 25. That memory location will now be empty, and you may program a different station to that location, or leave it empty.

Tape Recording

In normal operation, the audio source selected for listening through the HK 3480 is sent to the Tape Monitor Record Outputs 5 and Video 1 Record Outputs 7. This means that any program you are listening to may be recorded simply by placing a machine connected to the outputs for Tape Monitor 5 or Video 1 7 in the record mode.

When a tape recorder with separate record and playback heads is used, you may monitor the output of the recording by selecting the T-Mon Input 8C. The dot to the left of the Tape Monitor Input Indicator D will flash to remind you that you are listening to the record playback instead of the actual input source being recorded. Press it again to hear the input source.

The Input Indicator D for the last-selected source input will remain lit, although the flashing dot next to the Tape Monitor Input Indicator D will reflect that you are hearing the signal the HK 3480 is receiving from the device connected to the Tape Monitor Inputs 4. Press the T-Mon Input Selector 8 again to hear the original input source rather than the recording. When you have selected the device connected to the Tape Monitor Inputs 4, if it is a three-head tape deck in recording mode, you will hear the recording as it is being made. However, if the device connected to the Tape Monitor Inputs 4 is not capable of monitoring a recording, you will not hear anything. If that device is being used as a source rather than for recording, the HK 3480 will play the source signal, and any other source input that appears in the display will not be active.

IMPORTANT NOTE: Please make certain that you are aware of the copyright restrictions on any material you copy.

Memory Backup

This product is equipped with a nonvolatile EEPROM (Electrically Erasable and Programmable Read-Only Memory) that preserves tuner presets and system configuration information without the unit being connected to a main power source for any prolonged period of time.

Processor Reset

In the rare case where the unit's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least thirty minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

If the system still does not respond, it may be necessary to perform a complete reset. To reset the system, first turn the HK 3480 off by pressing the System Power Control 1.

Next, press and hold the front-panel Mute Button 4 for at least 4 seconds.

The Main Information Display B will briefly show the word RESET, and then return to normal operation.

When the system is reset in this fashion, all tuner presets will be lost and must be reentered.

If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

If these steps do not solve the problem, consult an authorized Harman Kardon service center.

Using the Remote Control

It is convenient to think of the functions of the remote control buttons in terms of "pages," where each source device (e.g., CD player) represents its own page of remote functions. The result is that some of the keys will perform different functions depending upon which device page has been selected prior to pressing the Source Selectors ⓒ, which also changes the input source selection on the HK 3480.

The Video 1, Video 2, Video 3, Tape Monitor/CDR and CD device pages are factory-programmed to operate compatible Harman Kardon products. The Video 1, Video 2 and Video 3 device pages are programmed at the factory to default to Harman Kardon DVD player control codes. The Tape Monitor/CDR device page is programmed as a factory default to operate Harman Kardon CD Recorders. The CD page defaults to Harman Kardon CD player or changer control codes. Please refer to the table below for specific information on the default functions of the remote keys for each device.

REMOTE BUTTON FUNCTIONS

BUTTON	PHONO Controls HK 3480 Only	VID 1 DVD Player Control Codes	VID 2 DVD Player Control Codes	VID 3/VID Front DVD Player Control Codes	TAPE MON/CDR CD Recorder Control Codes	CD CD Player/Changer Control Codes	AM Controls HK 3480 Tuner Only	FM Controls HK 3480 Tuner Only
MAIN POWER ON	System Power On	System Power On	System Power On	System Power On	System Power On	System Power On	System Power On	System Power On
MAIN POWER OFF	System Power Off	System Power Off	System Power Off	System Power Off	System Power Off	System Power Off	System Power Off	System Power Off
SPEAKERS 1	Speakers 1	Speakers 1	Speakers 1	Speakers 1	Speakers 1	Speakers 1	Speakers 1	Speakers 1
SPEAKERS 2	Speakers 2	Speakers 2	Speakers 2	Speakers 2	Speakers 2	Speakers 2	Speakers 2	Speakers 2
PHONO	Phono	Phono	Phono	Phono	Phono	Phono	Phono	Phono
TAPE/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR	Tape Mon/CDR
VID 1	VID 1	VID 1	VID 1	VID 1	VID 1	VID 1	VID 1	VID 1
VID 2	VID 2	VID 2	VID 2	VID 2	VID 2	VID 2	VID 2	VID 2
VID 3	VID 3	VID 3	VID 3	VID 3/VID Front	VID 3	VID 3	VID 3	VID 3
CD	CD	CD	CD	CD	CD	CD	CD	CD
AM	AM	AM	AM	AM	AM	AM	AM	AM
FM	FM	FM	FM	FM	FM	FM	FM	FM
PRESET DWN I<<		DVD OSD Back	DVD OSD Back	DVD OSD Back	CDR Skip Up	CD Track Skip +	Preset Tuning Up	Preset Tuning Up
PRESET UP >>I		DVD OSD Forward	DVD OSD Forward	DVD OSD Forward	CDR Skip Down	CD Track Skip –	Preset Tuning Down	Preset Tuning Down
TUNING DWN <<		DVD Search Reverse	DVD Search Reverse	DVD Search Reverse	CDR Search Reverse	CD Search Reverse	Tuning Down	Tuning Down
TUNING UP >>		DVD Search Forward	DVD Search Forward	DVD Search Forward	CDR Search Forward	CD Search Forward	Tuning Up	Tuning Up
REC/PAUSE		DVD Pause	DVD Pause	DVD Pause	CDR Record	CD Pause		
STOP		DVD Stop	DVD Stop	DVD Stop	CDR Stop	CD Stop		
ENTER		DVD Enter	DVD Enter	DVD Enter	CDR Random Play	CD Random Play		
PLAY		DVD Play	DVD Play	DVD Play	CDR Play	CD Play		
DISC SKIP UP		DVD Disc Skip +	DVD Disc Skip +	DVD Disc Skip +	CDR Disc Skip +	CD Disc Skip +		
DISC SKIP DOWN		DVD Disc Skip –	DVD Disc Skip –	DVD Disc Skip –	CDR Disc Skip –	CD Disc Skip –		
FM MODE		DVD Menu	DVD Menu	DVD Menu	CDR Time	CD Display Mode	FM Mode	FM Mode
VMAx	VMAx	VMAx	VMAx	VMAx	VMAx	VMAx	VMAx	VMAx
P. SCAN		DVD Intro Scan	DVD Intro Scan	DVD Intro Scan	CDR Intro Scan	CD Intro Scan	Preset Scan	Preset Scan
MUTE	Audio Mute	Audio Mute	Audio Mute	Audio Mute	Audio Mute	Audio Mute	Audio Mute	Audio Mute
SLEEP	Sleep Timer	Sleep Timer	Sleep Timer	Sleep Timer	Sleep Timer	Sleep Timer	Sleep Timer	Sleep Timer
DIMMER	Dimmer	Dimmer	Dimmer	Dimmer	Dimmer	Dimmer	Dimmer	Dimmer
TUNING UP		DVD OSD Up	DVD OSD Up	DVD OSD Up	CDP Select		Tuning Up	Tuning Up
TUNING DOWN		DVD OSD Down	DVD OSD Down	DVD OSD Down	CDR Select		Tuning Down	Tuning Down
MASTER VOL. UP	Volume Up	Volume Up	Volume Up	Volume Up	Volume Up	Volume Up	Volume Up	Volume Up
MASTER VOL. DOWN	Volume Down	Volume Down	Volume Down	Volume Down	Volume Down	Volume Down	Volume Down	Volume Down
DIRECT						CD +10	Frequency Direct	Frequency Direct
AUTO PRESET						CD Program Check	Auto Preset	Auto Preset
MEMORY						CD Program	Momory/Store	Momory/Store
CLEAR						CD Clear	Preset Clear	Preset Clear
1						CD 1	Memo 1	Memo 1
2						CD 2	Memo 2	Memo 2
3						CD 3	Memo 3	Memo 3
4						CD 4	Memo 4	Memo 4
5						CD 5	Memo 5	Memo 5
6						CD 6	Memo 6	Memo 6
7						CD 7	Memo 7	Memo 7
8						CD 8	Memo 8	Memo 8
9						CD 9	Memo 9	Memo 9
0						CD 0	Memo 0	Memo 0

TROUBLESHOOTING GUIDE

This unit is designed for trouble-free operation. Most problems users encounter are due to operating errors. So, if you have a problem, first check this list for a possible solution. If the problem persists, consult your authorized Harman Kardon service center.

If the problem is . . .	Make sure that the . . .
No lights appear when POWER button is pressed	Unit is plugged into a live outlet
No sound is heard	Unit has not been muted Correct input function selector button has been pressed Volume is turned up Speakers have been turned on using the Speaker Selectors Headphones are not in use Jumper pins are in place, unless an external amplifier is in use
No output from one or more channels	Cables are not defective: check/replace speaker cables
Tuner sound has a large amount of interference, or The "Stereo" display is not illuminated, or Tuner sound distorts and/or volume level is too low	Antenna is properly connected Antenna is properly located Antenna is set in the proper direction Antenna is adequate to receive the desired station
Tuner is intermittent or continuously buzzing or hissing	Unit is away from fluorescent lights, TVs, motors and other electrical appliances
Remote does not function correctly	Batteries are not weak, and replace them if necessary Room lighting is not overly bright
Cassette or CD sounds distorted	Cassette deck or CD player has not been plugged into the Phono Input ❷ (only use the outputs of a turntable or tone arm with the Phono Input ❷)
Turntable sounds distorted	Turntable has been plugged into the Phono Input ❷, as the other inputs are not compatable with turntable signal levels
No video image	Video source unit's video ouput is properly connected, the source is turned on and the correct video input on the HK 3480 has been selected Video Monitor Output ⓳ is connected to a TV or video display, and that the TV is turned on and the proper input on the TV has been selected

Audio Section

Stereo Mode

Continuous Average Power (FTC)

120 Watts per channel, 20Hz–20kHz
@ < 0.07% THD, both channels driven into 8 ohms
150 Watts per channel, 20Hz–20kHz
@ < 0.2% THD, both channels driven into 4 ohms

Input Sensitivity/Impedance	
Linear (High Level)	200mV/47k ohms
Signal-to-Noise Ratio (IHF-A)	95dB
Frequency Response	
@ 1W (+0dB, –3dB)	10Hz – 110kHz
High Instantaneous Current Capability (HCC)	±45 amps
Transient Intermodulation Distortion (TIM)	Unmeasurable
Rise Time	16µsec
Slew Rate	40V/µsec

Depth measurement includes knobs, buttons and terminal connections.

Height measurement includes feet and chassis.

All features and specifications are subject to change without notice.

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FM Tuner Section

Frequency Range	87.5 – 108MHz
Usable Sensitivity	IHF 1.12µV/13.5dBf
Signal-to-Noise Ratio	Mono/Stereo 73/72dB
Distortion	Mono/Stereo 0.3/0.4%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 65dB
Image Rejection	>80dB
IF Rejection	>100dB
Tuner Output Level	1kHz, ±100kHz, Dev 500mV

AM Tuner Section

Frequency Range	520 – 1720kHz
Signal-to-Noise Ratio	>40dB
Usable Sensitivity	Loop 500µV/M
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±10kHz, >25dB

Video Section

Television System	NTSC/PAL/SECAM
Signal Format	Composite
Input Level	1Vp-p
Input Impedance	75 ohms, unbalanced
Sync Polarity	Negative
Output Level	1Vp-p
Output Impedance	75 ohms, unbalanced
Video Frequency Response	10Hz – 10MHz

General

Power Requirement	AC 120V/60Hz	
Power Consumption	3W standby, 280W maximum (both channels driven)	
Dimension (Max)	(Product)	(Shipping)
Width	17.4 inches (442mm)	21.5 inches (545mm)
Height	6.6 inches (168mm)	9.9 inches (251mm)
Depth	15 inches (382mm)	17.9 inches (455mm)
Weight	23.0 lb (10.44kg)	27.3 lb (12.39kg)

harman/kardon®

A Harman International Company
250 Crossways Park Drive, Woodbury, New York 11797
www.harmankardon.com
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